# INDUSTRIAL DIRECT AND INDIRECT/DIRECT EVAPORATIVE COOLING

## Engineer designed to satisfy your design requirements.

### Modular Components

- Air Handling Modules in side, down or up discharge and single or dual inlet design.
- Evaporative Media Modules with standard 8" or Hi-Performance 12" media.
- Indirect Cooling Modules for added cooling with no moisture added (optional).

### Durable Construction

- Galvanized steel with our exclusive POLYBOND® polyester epoxy powder based coating ensures years of dependable service.

### Efficiency

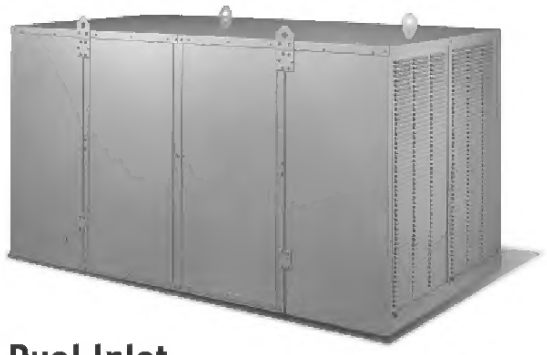
- Choice of media modules allows cooling efficiencies tailored to your design requirements.

### Cost Effectiveness

- Competitive first cost combined with substantial energy savings over refrigerated air units results in quick payback. Plus, the simplicity of design allows low maintenance requirements.

### Other Features

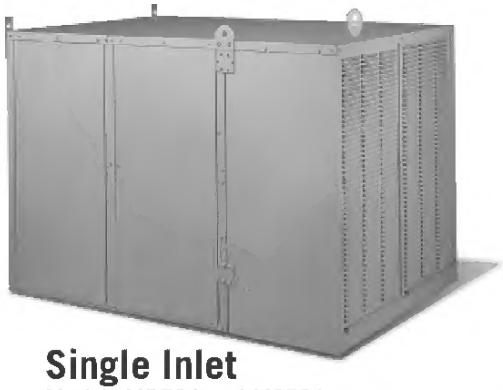
- Precision balanced blower wheel.
- Solid shaft for rugged durability.
- AdobeAir motors and pumps are U.L. Recognized.
- City of Los Angeles (C.O.L.A.) approved.
- AMCA Licensed ratings
- U.L. Classified
- U.L. Listed



**Dual Inlet**

Models MD628, MS628, and MU628 — U.L. Classified
Shown with 12" media modules DM120

Models UD980 and US980 — U.L. Listed
Shown with 12" media modules UM120



**Single Inlet**

Models MD524 and MS524 — U.L. Classified
Shown with 12" media modules DM080

Models UD960 and US960 — U.L. Listed
Shown with 12" media modules UM080

AdobeAir, Inc. certifies that the evaporative air cooling products shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

CLASSIFIED UL

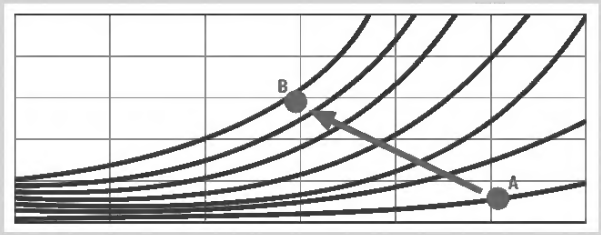
UL LISTED

www.Manualslib.com

# SINGLE-STAGE INDUSTRIAL EVAPORATIVE COOLING

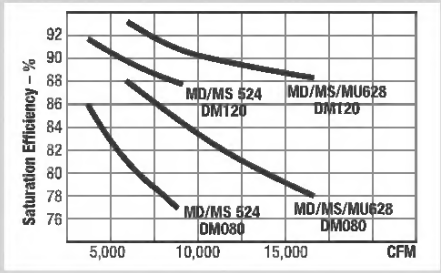
## Direct Evaporative Cooling Process

Direct evaporative cooling exchanges sensible heat for latent heat, and follows upward along a constant wet-bulb temperature line on the Psychrometric Chart. The result is a dry-bulb temperature of the leaving air (B) approaching the wet-bulb temperature of the entering air (A).



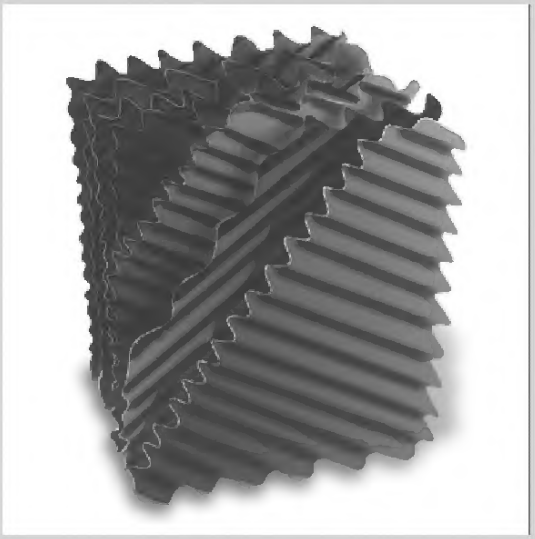

## Standard and Hi-Performance Models

The flexibility of modular components allows selection of CFM and saturation efficiencies producing the sensible heat capacities needed to meet design requirements. For many applications, our standard 8" media continues to be an economical choice, with an 80% saturation efficiency at 450 FPM. For more demanding design conditions, our 12" media offers 90% efficiency at around 450 FPM.




## MasterCool Evaporative Media

MasterCool evaporative media is constructed of special cellulose material, impregnated with insoluble anti-rot salts and rigidifying saturants. The cross-fluted design continually directs water to the air-entering side, inducing a highly turbulent mixing of air and water for optimum heat and moisture transfer.



## Direct Evaporative Cooling

Put simply, whenever water is evaporated, heat is absorbed. This basic principle underlies the design of the MasterCool direct evaporative cooler.

## High Quality Construction

Hot-dipped galvanized steel, welded for maximum strength is combined with our exclusive POLYBOND® finish that protects the whole system – cabinet pans, distributor covers, louvers, and all other parts contacting water. The electrostatically applied polyester epoxy powder-based coating is cured at high temperature and is so durable that these models are backed by the best warranty in the industry.

## Energy Efficient... Environmentally Friendly

With no compressors or condensors, MasterCool evaporative coolers offer significant energy savings over mechanical refrigeration units; and, with no CFC's, do not contribute to depletion of the ozone layer. Their air washing effect improves indoor air quality with fresh, filtered air constantly brought into the cooled space...forcing stale air out.

## Comfort Levels

Not only does evaporative cooling lower the temperature in the space to be cooled, it also lowers the temperature you feel. Rapid air movement produced by the MasterCool increases skin evaporation which causes you to feel 3-5° effectively cooler than the temperature read from a thermometer. Evaporative cooling can provide effective temperatures acceptable in most commercial/ industrial applications throughout the world.

## Typical Applications

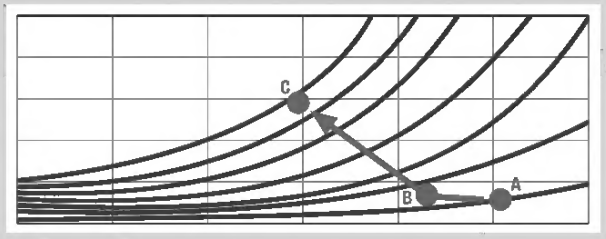
The Industrial MasterCool is used for area cooling or spot cooling. In many areas it can replace or supplement mechanical refrigeration needs in agricultural, institutional, commercial, and industrial applications. Applications such as kitchens, laundries, gymnasiums, heat treating areas, and dry cleaning plants requiring large quantities of fresh air moving through the building are ideal candidates for evaporative cooling.

www.Manualslib.com

# 2-STAGE INDUSTRIAL EVAPORATIVE COOLING

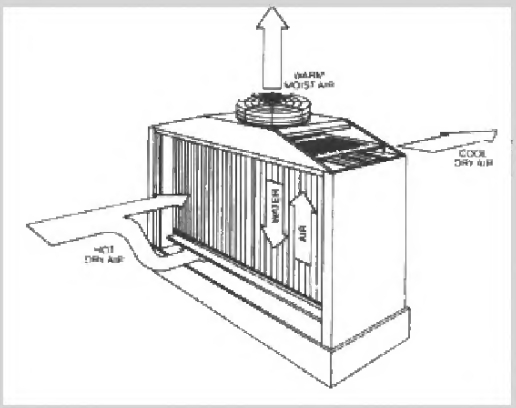
## Indirect/Direct Evaporative Cooling Process

In the indirect cooling stage, entering air is cooled along a horizontal humidity ratio line on the Psychrometric Chart (A to B) without adding moisture. In the next cooling stage, this air is further cooled along a new wet-bulb line (B to C), resulting in a lower dry-bulb temperature of leaving air than can be achieved with single stage direct evaporative cooling alone.



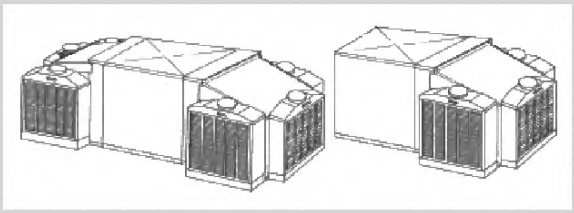

## The Indirect Cooling Module

Outside air is drawn into the ICM. A fan draws air through the inside of vertical fins (which have water running inside them). The air picks up heat and is expelled from the ICM while the fins are cooled by evaporation. Other outside air is drawn across the outside surfaces of the cooled fins, and is cooled without coming in contact with water. This cooled air, with no humidity added, then enters the direct evaporative section of the Industrial MasterCool for final cooling.



## Typical Configurations

Many configurations of 2-Stage Industrial MasterCool are possible. Typical field-assembled components include 2 or 3 Indirect Cooling Modules with Models MD/MS524 and 4 or 6 ICM's with models MD/MS/MU628 Contact your local MasterCool representative for assistance in sizing.



Models shown with three ICM's at each inlet location.

## 2-Stage Indirect/Direct Evaporative Cooling

2-Stage cooling allows you to use energy-saving evaporative cooling technology for design conditions where direct evaporative cooling alone is not adequate. A 2-stage cooler results in greater cooling power, less affected by higher ambient temperature and humidity.

In the indirect cooling stage, outside entering air is cooled sensibly reducing its total enthalpy. This "precooled" air is then evaporatively cooled in the direct cooling stage, approaching its new, lower wet-bulb temperature.

The end result is discharge temperatures near or even slightly below the wet-bulb temperature. More importantly, these lower discharge temperatures translate into customer comfort at a fraction of the cost of refrigerated air conditioning.

## Applications

With its substantial increase in cooling capacity, the indirect/direct 2-stage Industrial MasterCool can replace mechanical refrigeration in many applications.

## KoolKalk... Computer Aided Sizing

The sizing method described in this brochure can be used for general sizing of direct evaporative Industrial MasterCool units.

For more accurate sizing, and for sizing indirect/direct units, we recommend the use of KoolKalk... an IBM compatible computer program designed specifically for AdobeAir Evaporative Coolers. For more information please visit the AdobeAir, Inc. website at www.AdobeAir.com.

MasterCool By AdobeAir®

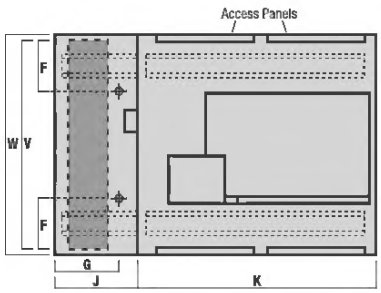
www.Manualslib.com

# DIMENSIONS AND SPECIFICATIONS

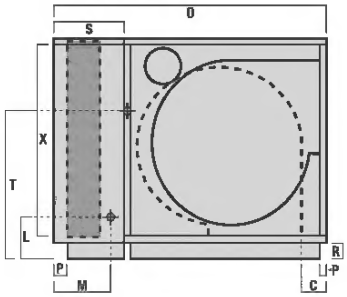
## Single Inlet Model Dimensions

MD524 or UD960 (Down Discharge) and MS524 or US960 (Side Discharge)

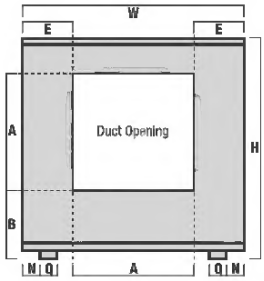
### Top View




### Side View




### Front View




## MD/MS524 or UD/US960

| Media SectionCabinet Model Number 1 Required | H | W | D | Duct Location Side A | Side B | Down C | Down E | Drain[1] Location F | Drain[1] Location G | Media Cabinet J | Blower Cabinet K | Water[2] Service Location L | Water[2] Service Location M | Electric[3] Service Location S | Electric[3] Service Location T | Blower Wheel Dia. | Blower Wheel Width | Blower Wheel Shaft | Blower Pulley Pitch Dia. | Skid Location N | Skid Location P | Skid Location Q | Skid Location R | Media Dimension X | Media Dimension V | Pad Area Sq.Ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DM080 or UM080 | 51½ | 49⅛ | 66 | 26¾ | 17 | 3 | 11¼ | 13 | 13⅜ | 17 | 49⅛ | 7¼ | 12⅜ | 18 | 35½ | 24 | 24 | 1 3/16 | 13 | 2 | 1⅝ | 4 | 2½ | 44⅝ | 48 | 14.8 |
| DM120 or UM120 | 51½ | 49⅛ | 70 | 26¾ | 17 | 3 | 11¼ | 13 | 17⅜ | 21 | 49⅛ | 7¼ | 16⅜ | 22 | 35½ | 24 | 24 | 1 3/16 | 13 | 2 | 1⅝ | 4 | 2½ | 44⅝ | 48 | 14.8 |

1. Drain is 3/4" male hose thread.
2. Water service can be left or right for 1/4" tubing.
3. 7/8" knockout for running electrical service.

## Electrical Specifications

| HP | Speed | Phase | Voltage | Amperage | NEMA Frame | Shaft Diameter | Motor Kit # |
|---|---|---|---|---|---|---|---|
| ¾ | 1 | 1 | 115/230 | 12.5/6.2 | 56 | ⅝ | EJ006 |
| ¾ | 2 | 1 | 230 | 5.9 | 56 | ⅝ | EJ020 |
| ¾ | 1 | 3 | 208-230/460 | 3.0/1.5 | 56 | ⅝ | EJ883 |
| 1 | 1 | 1 | 115/230 | 15.1/7.5 | 56 | ⅝ | EJ007 |
| 1 | 2 | 1 | 230 | 7.3 | 56 | ⅝ | EJ021 |
| 1 | 1 | 3 | 208-230/460 | 3.6/1.7 | 143T | ⅞ | EJ665 |
| 1½ | 1 | 1 | 115/230 | 14.5/6.3 | 143T | ⅞ | EJ212 |
| 1½ | 1 | 3 | 208-230/460 | 4.6/2.2 | 143T | ⅞ | EJ666 |
| 2 | 1 | 1 | 115/230 | 19.0/8.5 | 143T | ⅞ | EJ213 |
| 2 | 1 | 3 | 208-230/460 | 7.1/3.3 | 143T | ⅞ | EJ667 |
| 3 | 1 | 3 | 208-230/460 | 8.7-8.4/4.2 | 182T | 1⅛ | EJ668 |
| 5 | 1 | 3 | 208-230/460 | 14.2-13.0/6.5 | 184T | 1⅛ | EJ659 |
| 7½ | 1 | 3 | 208-230/460 | 20.9-19.2/9.6 | 213T | 1⅜ | EJ675 |

- Amperage from National Electric Code.
- Single phase motors rated 230 volts can be operated at nameplate amps at 208 volts.
- See nameplate on actual motor for amperage in figuring overload protector.
- All 3-phase motors listed are suitable for use on evaporative coolers at 200 volts.

## Pump Specifications

| Pump Model# | Volts | Amps | Watts | GPH At 4' Head |
|---|---|---|---|---|
| CP280 | 115 | 1.2 | 80 | 300 |
| CP480 | 230 | .6 | 80 | 300 |

Note: Pumps are available in 115 volt and 230 volt models. As a result, transforming or separate circuiting may be required for other voltages.

## Bleed Rates

GPH per Media Module

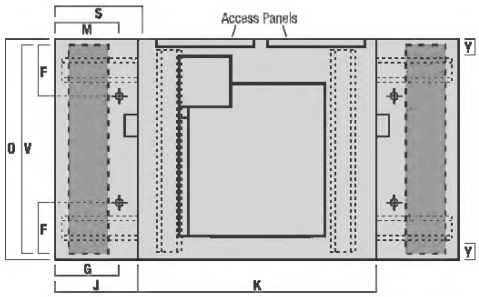
| Blower Model | Blower Motor HP ¾ | 1 | 1½ | 2 | 3 | 5 | 7½ |
|---|---|---|---|---|---|---|---|
| 524 or 960 | 7 | 8 | 9 | 10 | 10 | – | – |
| 628 or 980 | – | 11 | 13 | 14 | 16 | 18 | 20 |

Downloaded from www.Manualslib.com manuals search engine

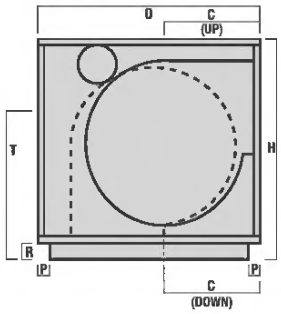
# Dual Inlet Model Dimensions

M0628 or UD980 (Down Discharge), MS628 or US980 (Side Discharge) and MU628 (Up Discharge)

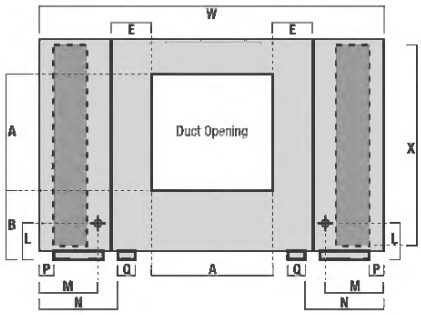
**Top View**




**Side View - Blower Section**




**Front View**




## MD/MS/MU628 or UD/US980

| Media Section Model Number 1 Required | Cabinet | | | Duct Location | | | | Drain[1] Location | | Media Cabi-net | Blower Cabi-net | Water[2] Service Location | | Electric[3] Service Location | | Blower Wheel | | | Blower Pulley Pitch | Skid Location | | | | | Media Dimension | | Pad Area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Side | | Down | | | | | | | | | | | | | | | | | | | | | |
| | H | W | D | A | B | C | E | F | G | J | K | L | M | S | T | Dia. | Width | Shaft | Dia. | N | P | Y | Q | R | X | V | Sq.Ft. |
| DM080 or UM080 | 51½ | 83⅛ | 49⅛ | 31¾ | 17¾ | 15¼ | 8¾ | 13 | 13⅜ | 17 | 49⅛ | 7¼ | 12⅜ | 18 | 35½ | 28 | 28 | 1 3/16 | 18 | 19 | 1⅝ | 2 | 4 | 2½ | 44⅝ | 48 | 14.8 |
| DM120 or UM120 | 51½ | 91⅛ | 49⅛ | 31¾ | 17¾ | 15¼ | 8¾ | 13 | 17⅜ | 21 | 49⅛ | 7¼ | 16⅜ | 22 | 35½ | 28 | 28 | 1 3/16 | 18 | 23 | 1⅝ | 4 | 4 | 2½ | 44⅝ | 48 | 14.8 |

1. Drain is 3/4" male hose thread.
2. Water service can be left or right for 1/4" tubing.
3. 7/8" knockout for running electrical service.

## Sizing Instructions

Follow these steps to properly size the Industrial MasterCool. The performance or Sensible Heat Capacity of any cooler is a function of both the CFM and saturation efficiency (which determines the delivered air discharge temperature). Sizing by only considering CFM may result in an improperly sized application.

**1. Determine design conditions:**

Dutdoor Dry-8ulb D81

Dutdoor Wet-8ulb W81

Indoor Dry-8ulb T1

**2. Determine design sensible heat load (Btuh)**

**3. Determine leaving air temperature (LAT):**

LAT = D81 - [(D81 - W8 ) * EFF]

where EFF ' 0.80 for 8" media or 0.90 for 12" media

**4. Determine CFM required:**

$$CFM = \frac{0.925 * \text{Sensible Heat Load}}{(T1 - LAT)}$$

**5. Determine the cooler(s) required:**

Refer to the specification / air flow charts on next page.

**6. Use KoolKalk to account for various losses:**

This will result in more accurate sizing.

## Motor Sheave Selection

**1. Determine the external static pressure of the air delivery system.**

**2. Determine the motor (H.P., Voltage and Phase) required to deliver the design airflow.**

**3. Determine the shaft size for the motor selected.**

Refer to the Electrical Specifications chart on facing page.

**4. Determine the RPM that will deliver the required airflow (CFM) at the static pressure of the system.**

Refer to the Certified Air Delivery CFM chart for the chosen cooler and selected motor HP.

**5. Determine the sheave, and the number of turns open, that is closest to the desired RPM.**

Refer to the Sheave Selection charts on the next page. Find the selected motor HP, shaft size, and desired RPM (See Steps 2-4 above). You might need to look at more than one sheave before finding the correct RPM.

**6. Specify the sheave and sheave setting (turns open) for the installer.**

## Ordering

**When ordering your cooler, you should know this information.**

- System design static pressure.
- Desired air volume at system design.
- Electrical power supply available.
- Stability of structure to support operating weight of unit.

**Complete systems consist of the following components, and are sold separately for application versatility.**

- Cabinet – 1 blower section
- Wet media section (1 for 524's - 2 for 628's)
- Motor
- Motor sheave
- Pulley-belt kit
- Pump (one required for each media section)

NDTE: Motor starters, internal wiring and over-current protection are not supplied.

Downloaded from www.Manualslib.com manuals search engine

## Certified Air Delivery CFM at Various External Static Pressures

**Inches Water Gauge. AMCA Licensed Ratings.**

| Model | Operating Weight | BHP | Belt information Quantity | Down | Side | Up | .0 CFM | .0 RPM | .1 CFM | .1 RPM | .2 CFM | .2 RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **524 with 0M080 or 960 with UM080 — 8" Media** | | | | | | | | | | | | |
| | 560 | ¾ | 1 | AX78 | AX80 | | 6390 | 298 | 6070 | 310 | 5710 | 320 |
| | 570 | 1 | 1 | AX78 | AX80 | | 7030 | 329 | 6760 | 339 | 6420 | 349 |
| | 575 | 1½ | 1 | AX78 | AX80 | | 8050 | 376 | 7810 | 385 | 7530 | 394 |
| | 580 | 2 | 1 | AX78 | AX80 | | 8860 | 414 | 8640 | 422 | 8400 | 430 |
| | 590 | 3 | 1 | AX78 | A82* | | 9050 | 422 | 9050 | 440 | 9050 | 459 |
| **524 with 0M120 or 960 with UM120 — 12" Media** | | | | | | | | | | | | |
| | 600 | ¾ | 1 | AX78 | AX80 | | 6250 | 298 | 5900 | 309 | 5550 | 321 |
| | 610 | 1 | 1 | AX78 | AX80 | | 6880 | 328 | 6560 | 338 | 6250 | 349 |
| | 615 | 1½ | 1 | AX78 | AX80 | | 7880 | 376 | 7600 | 384 | 7320 | 393 |
| | 620 | 2 | 1 | AX78 | AX80 | | 8670 | 414 | 8420 | 421 | 8160 | 429 |
| | 630 | 3 | 1 | AX78 | A82* | | 9050 | 422 | 9050 | 439 | 9050 | 458 |
| **628 with two 0M080 or 980 with two UM080 — 8" Media** | | | | | | | | | | | | |
| | 818 | 1 | 1 | A95* | A95* | A95 | 9720 | 214 | 9320 | 224 | 8650 | 235 |
| | 823 | 1½ | 1 | A95* | A95* | A95 | 11130 | 245 | 10720 | 254 | 10230 | 263 |
| | 828 | 2 | 1 | A95* | A95* | A95 | 12250 | 270 | 11890 | 278 | 11460 | 286 |
| | 838 | 3 | 2 | A97 | A97 | A95 | 14020 | 309 | 13720 | 316 | 13350 | 323 |
| | 858 | 5 | 2 | A97 | A97 | A95 | 16620 | 367 | 16390 | 371 | 16080 | 378 |
| | 898 | 7½ | 2 | A100* | A100* | A95 | //////////// | | 18100 | 406 | 18100 | 418 |
| **628 with two 0M120 or 980 with two UM120 — 12" Media** | | | | | | | | | | | | |
| | 908 | 1 | 1 | A95* | A95* | A95 | 9680 | 216 | 9080 | 226 | 8530 | 237 |
| | 913 | 1½ | 1 | A95* | A95* | A95 | 11080 | 248 | 10540 | 256 | 10080 | 265 |
| | 918 | 2 | 1 | A95* | A95* | A95 | 12190 | 273 | 11700 | 280 | 11260 | 288 |
| | 928 | 3 | 2 | A97 | A97 | A95 | 13950 | 312 | 13510 | 318 | 13130 | 325 |
| | 948 | 5 | 2 | A97 | A97 | A95 | 16540 | 370 | 16050 | 375 | 15820 | 380 |
| | 988 | 7½ | 2 | A100* | A100* | A95 | 18100 | 406 | 18100 | 409 | 18100 | 428 |

**Shaded Areas:** Do not exceed listed RPM, water entrainment may result.

////////// NOT RECOMMENDED

*Not supplied: MS524 coolers with a 3 HP motor require the purchase of one A82 belt (AX78 belt included with unit). MD628 and MS628 coolers with 1, 1½ or 2 HP motor requires one A95 belt (two A97 belts included with unit). MD628 and MS628 coolers with 7½ HP motor require two A100 belts (two A97 belts included with unit).

## MD/MS 524 or UD/US 960 Sheave Selection

| Motor HP | Browning Part # | Bore | Blower RPM / Sheave Turns Open 5 | 4½ | 4 | 3½ | 3 | 2½ | 2 | 1½ | 1 | ½ | 0 | MasterCool Package # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Single Phase Motor Blower RPM @ 1725 Motor RPM / Sheave Turns Open** | | | | | | | | | | | | | | |
| ¾, 1 | 1VL34 | 5/8 | 252 | 265 | 279 | 292 | 305 | 318 | 332 | 345 | 358 | 372 | 385 | EL114 |
| ¾, 1 | 1VL40 | 5/8 | 318 | 332 | 345 | 358 | 372 | 385 | 398 | 411 | 425 | 438 | 451 | EL110 |
| 1½, 2 | 1VL40 | 7/8 | 318 | 332 | 345 | 358 | 372 | 385 | 398 | 411 | 425 | 438 | 451 | EL112 |
| ¾, 1 | 1VL44 | 5/8 | 372 | 385 | 398 | 411 | 425 | 438 | 451 | 464 | 478 | 491 | 504 | ESH2411 |
| 1½, 2 | 1VL44 | 7/8 | 372 | 385 | 398 | 411 | 425 | 438 | 451 | 464 | 478 | 491 | 504 | EL685 |
| 1½, 2 | 1VP50 | 7/8 | 451 | 464 | 478 | 491 | 504 | 518 | 531 | 544 | 557 | 571 | 584 | 686 |
| **Three Phase Motor Blower RPM @ 1750 Motor RPM / Sheave Turns Open** | | | | | | | | | | | | | | |
| ¾ | 1VL34 | 5/8 | 256 | 269 | 283 | 296 | 310 | 323 | 337 | 350 | 363 | 377 | 390 | EL114 |
| 1 | 1VL34 | 7/8 | 256 | 269 | 283 | 296 | 310 | 323 | 337 | 350 | 363 | 377 | 390 | EL116 |
| ¾ | 1VL40 | 5/8 | 323 | 337 | 350 | 363 | 377 | 390 | 404 | 417 | 431 | 444 | 458 | EL110 |
| 1, 1½, 2 | 1VL40 | 7/8 | 323 | 337 | 350 | 363 | 377 | 390 | 404 | 417 | 431 | 444 | 458 | EL112 |
| ¾ | 1VL44 | 5/8 | 377 | 390 | 404 | 417 | 431 | 444 | 458 | 471 | 485 | 498 | 512 | ESH2411 |
| 1, 1½, 2 | 1VL44 | 7/8 | 377 | 390 | 404 | 417 | 431 | 444 | 458 | 471 | 485 | 498 | 512 | EL685 |
| 3 | 1VL44 | 1 1/8 | 377 | 390 | 404 | 417 | 431 | 444 | 458 | 471 | 485 | 498 | 512 | 684 |
| 1½, 2 | 1VP50 | 7/8 | 458 | 471 | 485 | 498 | 512 | 525 | 538 | 552 | 565 | 579 | 592 | 686 |
| 3 | 1VP50 | 1 1/8 | 458 | 471 | 485 | 498 | 512 | 525 | 538 | 552 | 565 | 579 | 592 | 685 |

Downloaded from www.Manualslib.com manuals search engine

| .3 CFM | .3 RPM | .4 CFM | .4 RPM | .5 CFM | .5 RPM | .6 CFM | .6 RPM | .7 CFM | .7 RPM | .8 CFM | .8 RPM | .9 CFM | .9 RPM | 1.0 CFM | 1.0 RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |
| 5320 | 333 | 4850 | 348 | 4200 | 373 | 3670 | 391 | 3200 | 408 | 2770 | 426 | 2400 | 443 | 2060 | 460 |
| 6080 | 359 | 5720 | 371 | 5280 | 386 | 4660 | 409 | 4160 | 426 | 3720 | 442 | 3310 | 458 | 2940 | 473 |
| 7250 | 402 | 6930 | 412 | 6630 | 422 | 6240 | 434 | 5840 | 449 | 5260 | 471 | 4830 | 485 | 4440 | 499 |
| 8140 | 438 | 7880 | 446 | 7590 | 455 | 7310 | 464 | 6970 | 475 | 6630 | 487 | 6140 | 505 | 5660 | 523 |
| 9050 | 475 | 9050 | 491 | 9050 | 508 | 8820 | 516 | 8570 | 524 | 8330 | 532 | 8030 | 542 | 7730 | 552 |
| | | | | | | | | | | | | | | | |
| 5170 | 334 | 4720 | 349 | 4070 | 371 | 3590 | 390 | 3140 | 407 | 2740 | 423 | 2340 | 441 | 1980 | 458 |
| 5910 | 360 | 5540 | 373 | 5130 | 386 | 4510 | 408 | 4060 | 425 | 3650 | 441 | 3270 | 455 | 2900 | 471 |
| 7040 | 403 | 6740 | 413 | 6430 | 424 | 6070 | 435 | 5620 | 450 | 5110 | 469 | 4710 | 484 | 4350 | 498 |
| 7920 | 438 | 7650 | 447 | 7380 | 456 | 7100 | 466 | 6760 | 476 | 6440 | 487 | 5930 | 505 | 5510 | 520 |
| 9050 | 475 | 9050 | 492 | 8820 | 509 | 8570 | 518 | 8340 | 526 | 8080 | 534 | 7790 | 544 | 7520 | 553 |
| | | | | | | | | | | | | | | | |
| 8030 | 246 | 7380 | 260 | 6670 | 276 | 5240 | 308 | 4540 | 326 | 3840 | 345 | 3290 | 363 | 2740 | 379 |
| 9700 | 273 | 9160 | 283 | 8600 | 294 | 7990 | 307 | 7030 | 329 | 5890 | 354 | 5290 | 371 | 4690 | 387 |
| 10980 | 294 | 10510 | 303 | 10010 | 313 | 9500 | 323 | 8960 | 335 | 8360 | 348 | 6990 | 379 | 6280 | 395 |
| 12960 | 330 | 12540 | 337 | 12130 | 345 | 11690 | 353 | 11250 | 362 | 10800 | 371 | 10330 | 382 | 9810 | 393 |
| 15770 | 384 | 15450 | 390 | 15090 | 396 | 14730 | 402 | 14390 | 409 | 14020 | 416 | 13660 | 423 | 13280 | 430 |
| 18100 | 431 | 18030 | 440 | 17760 | 445 | 17440 | 450 | 17130 | 455 | 16820 | 461 | 16520 | 467 | 16210 | 473 |
| | | | | | | | | | | | | | | | |
| 7930 | 248 | 7220 | 261 | 6490 | 279 | 5130 | 310 | 4390 | 329 | 3810 | 345 | 3220 | 361 | 2630 | 376 |
| 9570 | 274 | 9030 | 285 | 8420 | 296 | 7810 | 310 | 6930 | 330 | 5760 | 358 | 5130 | 374 | 4600 | 388 |
| 10830 | 297 | 10350 | 306 | 9860 | 315 | 9310 | 325 | 8730 | 337 | 8110 | 353 | 6900 | 379 | 6150 | 398 |
| 12760 | 332 | 12370 | 340 | 11960 | 348 | 11530 | 356 | 11070 | 364 | 10580 | 373 | 10070 | 384 | 9630 | 396 |
| 15510 | 386 | 15190 | 393 | 14890 | 399 | 14530 | 406 | 14190 | 412 | 13820 | 419 | 13460 | 426 | 13060 | 433 |
| 18010 | 437 | 17730 | 443 | 17450 | 448 | 17190 | 454 | 16900 | 459 | 16590 | 465 | 16300 | 471 | 15970 | 477 |

- Power ratings (BHP) does not include drive losses.
- Belt tension should be 20 pounds for "A" section belts.
- Performance ratings include the effects of evaporative media in the airstream.
- Performance shown is for installation type B: Free Inlet, Ducted Outlet.

## MD/MS/MU 628 or UD/US 980 Sheave Selection

| Motor HP | Browning Part # | Bore | Blower RPM / Sheave Turns Open | | | | | | | | | | | MasterCool Package # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 5 | 4 ½ | 4 | 3 ½ | 3 | 2 ½ | 2 | 1 ½ | 1 | ½ | 0 | |
| **Single Phase Motor Blower RPM @ 1725 Motor RPM / Sheave Turns Open** | | | | | | | | | | | | | | |
| 1 | 1VL40 | 5/8 | 230 | 240 | 249 | 259 | 268 | 278 | 288 | 297 | 307 | 316 | 326 | EL110 |
| 1½, 2 | 1VL40 | 7/8 | 230 | 240 | 249 | 259 | 268 | 278 | 288 | 297 | 307 | 316 | 326 | EL112 |
| 1 | 1VL44 | 5/8 | 268 | 278 | 288 | 297 | 307 | 316 | 326 | 335 | 345 | 355 | 364 | ESH2411 |
| 1½, 2 | 1VL44 | 7/8 | 268 | 278 | 288 | 297 | 307 | 316 | 326 | 335 | 345 | 355 | 364 | EL685 |
| 1 | 1VP50 | 5/8 | 326 | 335 | 345 | 355 | 364 | 374 | 383 | 393 | 403 | 412 | 422 | 693 |
| 1½, 2 | 1VP50 | 7/8 | 326 | 335 | 345 | 355 | 364 | 374 | 383 | 393 | 403 | 412 | 422 | 686 |
| **Three Phase Motor Blower RPM @ 1750 Motor RPM / Sheave Turns Open** | | | | | | | | | | | | | | |
| 1, 1½, 2 | 1VL34 | 7/8 | 185 | 194 | 204 | 214 | 224 | 233 | 243 | 253 | 263 | 272 | 282 | EL116 |
| 1, 1½, 2 | 1VL40 | 7/8 | 233 | 243 | 253 | 263 | 272 | 282 | 292 | 301 | 311 | 321 | 331 | EL112 |
| 1, 1½, 2 | 1VL44 | 7/8 | 272 | 282 | 292 | 301 | 311 | 321 | 331 | 340 | 350 | 360 | 369 | EL685 |
| 1, 1½, 2 | 1VP50 | 7/8 | 331 | 340 | 350 | 360 | 369 | 379 | 389 | 399 | 408 | 418 | 428 | 686 |
| 3 | 2VP42 | 1 1/8 | 253 | 263 | 272 | 282 | 292 | 301 | 311 | 321 | 331 | 340 | 350 | 687 |
| 3, 5 | 2VP50 | 1 1/8 | 331 | 340 | 350 | 360 | 369 | 379 | 389 | 399 | 408 | 418 | 428 | 688 |
| 5 | 2VP60 | 1 1/8 | 408 | 418 | 428 | 438 | 447 | 457 | 467 | 476 | 486 | 496 | 506 | 689 |
| 7½ | 2VP60 | 1 3/8 | 408 | 418 | 428 | 438 | 447 | 457 | 467 | 476 | 486 | 496 | 506 | 692 |

Downloaded from www.Manualslib.com manuals search engine

# Project Submittal Sheet

Models M0/MS 524, M0/MS/MU 628 — U.L. Classified or U0/US 960, U0/US 980 — U.L. Listed

Project _____ SHL* _____

Location _____

Architect _____

Engineer _____

Contractor _____

Submitted By _____ Oate _____

*Total design sensible heat load of project.

## Blower Section – Motor – Motor Sheave – Pulley and Belt Kit

| Ref. No. | Blower Section Qty. | Model No. | Motor Specifications Motor HP | Volts | Phase | Amps | Kits Motor Sheave | Belt |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |

*NOTE: Each unit (ready to operate) consists of one blower section, one blower motor, one pulley-belt kit, one motor sheave.

## Wet Section – Pump

| Ref. No. | Wet Section Qty. | Model No. | Pump Quantity | Volts | Amps | GPM |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |

*NOTE: Each wet section (ready to operate) consists of one wet module and one pump.

**Your local MasterCool Representative of AdobeAir, Inc., is ready to assist you in unit selection and application.**

The world leader in evaporative cooling technology, AdobeAir, Inc. is continually involved in the process of product improvement. AdobeAir, Inc. therefore reserves the right to change specifications and/or design without prior notice. To obtain the most current product information and/or specifications, visit the AdobeAir, Inc. web site at **www.AdobeAir.com.**

**MasterCool evaporative coolers and components are designed and tested in accordance with one or more of the following standards or agencies:**

**Air Delivery:** Data published derived from tests conducted in accordance with A.M.C.A. (Air Movement and Control Assoc.) Standard 210.

**Sealant:** Water Immersion: per ASTM 0870. Flexibility: per ASTM 0756. Corrosion Resistance: per ASTM B117. Cycle Freeze/Thaw: per ASTM C117.

**PDLYBOND®:** Corrosion Resistance: per ASTM B117. Pencil Hardness: per ASTM D3363. Adhesion: per ASTM D3359. Impact Resistance: per ASTM D2794. Flexibility: per ASTM D522. Specular Gloss: per ASTM D523. Surface Burning Characteristics of Building Materials (best rating) per U.L. 723 and ASTM E-84.

**Pumps:** Recognized under the U.L. component recognition program for the application – construction, thermal overload, running overload, and locked rotor protection.

**Blower Motors:** U.L. Recognized general purpose drip-proof.

**Polymeric Materials:** Tested in accordance with U.L. 94 and 746C. Covered by City of Los Angeles Research Reports (C.O.L.A.) RR930224 (for all single phase applications), or RR930190 (for 3 phase applications) Electrical, and RR8141 Mechanical.

Manufactured in Mexico by:
**AdobeAir, Inc.**
1450 East Grant St.
Phoenix, AZ 85034
www.AdobeAir.com

L900799A March 2007

Downloaded from www.Manuatstib.com manuals search engine